

Patent Abstracts of Japan

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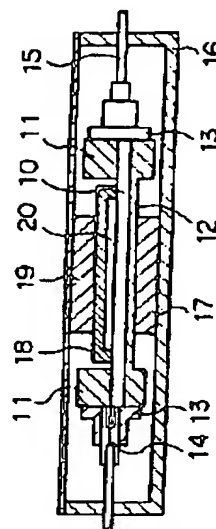
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TITLE : WAVEGUIDE TYPE OPTICAL DEVICE



ABSTRACT : PURPOSE: To obtain the waveguide type optical device which is stable to a temp. change and has high reliability by joining elements to control the temp. of a waveguide substrate to both front and rear surfaces of the waveguide substrate.

CONSTITUTION: A Peltier element 17 which is a temp. control element is previously mounted to a housing 16 and an optical unit is packaged in the upper part thereof. A cover having internally a recessed dent or front surface holding glass 18 in this embodiment is fixed at the center of the front surface of the  $\text{LiNbO}_3$  substrate 3 by directing its dent toward the substrate 10 side, i.e. directing the open end face side thereof toward the substrate 10 side after the packaging of the optical unit. Further, the 2nd Peltier element 19 is packaged on this glass 18. The elements 17, 19 which are the Peltier element 17 are joined to both the front and rear surfaces of the substrate 10 in such a manner and the temp. is controlled, by which the substrate 10 is kept always at a uniform temp. as against the temp. change around the device and, therefore, the characteristics are stabilized.

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